

Claims

1 1. An optical source, comprising:
2 an optical emitter;
3 an encapsulant covering the optical emitter; and
4 a diffractive element integrated into the encapsulant, wherein the encapsulant passes
5 light from the optical emitter to the diffractive element.

1 2. The optical source of claim 1 wherein the optical emitter includes at least one
2 LED.

1 3. The optical source of claim 1 wherein the optical emitter is positioned at a
2 conductive mounting site of a conductive lead.

1 4. The optical source of claim 1 wherein the optical emitter is positioned at a
2 conductive mounting site of a conductive heat sink and the optical source is a surface mount
3 device.

1 5. The optical source of claim 3 wherein the conductive mounting site includes a
2 reflective cup.

1 6. The optical source of claim 4 wherein the conductive mounting site includes a
2 reflective cup.

1 7. The optical source of claim 1 wherein at least one of the optical emitter and the
2 encapsulant includes a secondary emitter.

1 8. An optical source, comprising:
2 an optical emitter providing an optical signal; and
3 a diffractive element integrated into an encapsulant covering the optical emitter,
4 intercepting the provided optical signal and diffracting the optical signal to form a
5 predesignated optical radiation pattern.

1 9. The optical source of claim 8 wherein the optical emitter is an LED.

1 10. The optical source of claim 8 wherein at least one of the optical emitter and the
2 encapsulant includes a secondary emitter.

1 11. The optical source of claim 8 wherein the diffractive element has one of a binary
2 grating profile, a sawtooth grating profile, a sinusoidal grating profile, a multiple phase-level
3 grating profile, and a binary subwavelength grating profile.

1 12. The optical source of claim 8 wherein the encapsulant covering the optical
2 emitter encases the optical emitter.

1 13. The optical source of claim 9 wherein the optical emitter is positioned at a
2 conductive mounting site of a conductive lead.

1 14. The optical source of claim 11 wherein the optical emitter is positioned at a
2 conductive mounting site of a conductive lead.

1 15. The optical source of claim 9 wherein the optical emitter is positioned at a
2 conductive mounting site of a conductive heat sink and the optical source is a surface mount
3 device.

1 16. The optical source of claim 11 wherein the optical emitter is positioned at a
2 conductive mounting site of a conductive heat sink and the optical source is a surface mount
3 device.

1 17. A method, comprising:
2 generating an optical signal;
3 transmitting the optical signal through an encapsulant; and
4 diffracting the optical signal transmitted through the encapsulant to form a
5 predesignated optical radiation pattern.

1 18. The method of claim 17 wherein generating the optical signal is provided by an
2 optical emitter.

1 19. The method of claim 18 wherein diffracting the optical signal transmitted through
2 the encapsulant is provided by a diffractive element integral to the encapsulant.

1 20. The method of claim 19 wherein the diffractive element has one of a binary
2 grating profile, a sawtooth grating profile, a sinusoidal grating profile, a multiple phase-level
3 grating profile, and a binary subwavelength grating profile.